

Amendments to the Specification:

Please replace the Brief Description of the Drawings with the following amended Brief Description of the Drawings:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram of a known passive interrogator label system;

FIG. 2 is a block diagram of a transponder or "label" which is used in the system of FIG. 1;

FIGS. 3A and 3B are time diagrams, drawn to different scales, of the radio frequencies contained in the interrogation and reply signals transmitted with the system of FIG. 1;

FIG. 4 is a block diagram illustrating the decoding process carried out by the signal processor in the system of FIG. 1;

FIG. 5 is a block signal diagram of a passive transponder which may be used with the system of FIG. 1;

FIG. 6 is a plan view, in enlarged scale, of a first configuration of the transponder of FIG. 5;

FIG. 7 is a plan view, in greatly enlarged scale, of a portion of the transponder configuration shown in FIG. 6;

FIGS. 8A and 8B shows a prior art transponder having sets of parallel acoustic paths and reflective elements disposed along the acoustic paths;

FIGS. 9A-9C show an information cell in time and frequency space, an array of information cells in time and frequency and an array of information cells in time only, respectively;

FIGS. 10A and 10B show modulation patterns in phase-amplitude space for a QAM-16 and QAM-18 polar modulation, respectively;

FIGS. 11A-11C show beam coverage using a patch antenna, polarization axes and a representation of multiple readers reading a single tag, respectively;

FIGS. 12A-12[C] show a representation in time and frequency of a pulse, a chirp, and a weighted chirp impulse, respectively;

FIG. 13 shows a graph of superposed transmitted and received waveforms in frequency domain from an acoustic wave transponder;

FIG. 14 shows a comparison of compressed pulse shapes for frequency weighting functions;

FIGS. 15-18 show differing embodiments of acoustic transponder tags according to the present invention having a wrapped acoustic path;

FIGS. 19A-19C show differing embodiments of the acoustic transponder tags according to the present invention having a multiply reflected path;

FIG. 20 shows a dual transducer trackchanger embodiment according to the present invention;

FIG. 21 shows a schematic diagram of a reflective array compressor (RAC) embodiment according to the present invention;

FIGS. 22 and 23 show loss calculations for various RAC embodiments according to the present invention;

FIG. 24 shows a detail of individual reflective elements;

FIG. 25 shows an arrangement effectively providing a non-integral number of elements in a reflective strip;

FIG. 26 schematically shows the generation of second order paths from an acoustic wave incident on a set of parallel strips;

FIG. 27 shows a schematic representation of a RAC embodiment according to the present invention employing trackchangers;

FIGS. 28, 29 and 30 show embodiments according to the present invention employing extensive use of trackchangers; and

FIGS. 31, 32 and 33 show embodiments according to the present invention employing sequential QAM encoding of an acoustic wave;

FIG. 34 illustrates a Maxim MAX 2101 RF-to-bits® converter in accordance with one embodiment of the present invention; and

FIGS. 35A AND 35B illustrate a phase angle alteration in accordance with one embodiment of the present invention.